Proteomics Science & Society:

The role of knowledge translation in moving towards clinical applications

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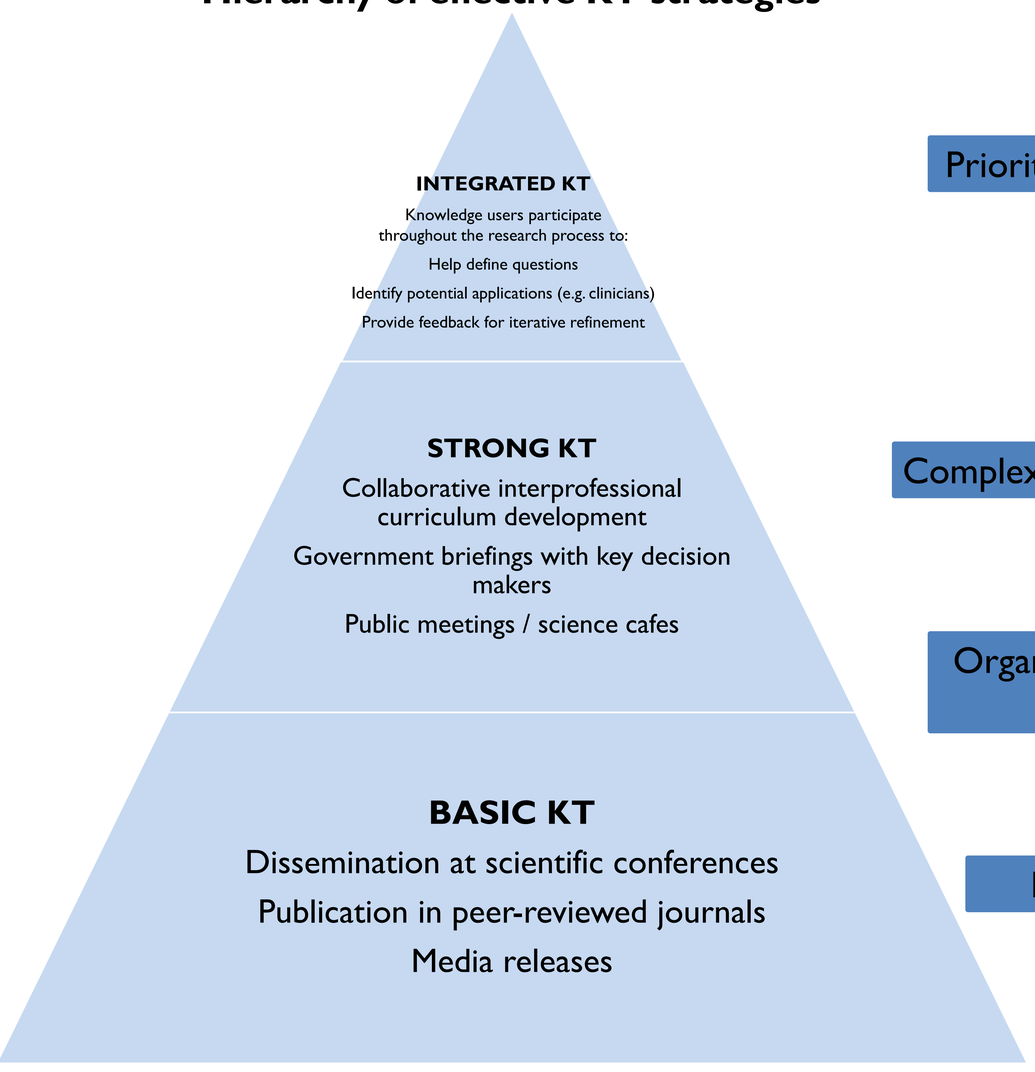
Key Issue	Gaining support for proteomics science requires effective knowledge translation. **Knowledge translation (KT) processes turn the evidence generated by scientific discovery into recommendations for clinical applications, funding priorities, and policy/regulatory reforms**. Clinicians, regulators, and funders need to understand *why* emerging proteomics knowledge is relevant, and *what* are the potential applications of that knowledge. A lack of clarity remains about what KT means.
Project Description	This is a multi-year project on standardization in health regulation, funded by the Canadian Institutes of Health Research. We interview proteomics researchers and funders to ask the following key questions:
Key Questions	**Q1:** What key areas do proteomics scientists, funders, and regulators see as potential areas of miscommunication? **Q2:** How do proteomics scientists view the process of knowledge translation? **Q3:** How is proteomics knowledge translated? **Q4:** What role does standardization have in proteomics KT?
What do Proteomics Researchers need to know about KT?	Simple dissemination – publishing or presenting results in conferences – is often a part of an end-of-grant KT strategy, but many argue that effective KT can only happen if **the research has a measurable impact on the policy/funding environment or on health outcomes.** Have funding bodies changed their priorities recognizing the significance of proteomics research? Are policy makers engaging with proteomics to understand the long-term implications for health care? Do clinicians understand the potential implications of the science for their patients? **We present preliminary findings from our interviews on barriers to effective KT in proteomics science.**

Hierarchy of effective KT strategies



Barriers

- Priorities of funding agencies
- Complexity of proteomics science
- Organization of proteomics research
- Role of standards

Reasons for barriers?

Why isn't proteomics a priority of funding agencies?

- "They don't believe in (proteomics) at all. There are no proteomics panels at [funder]. There are lots of genomics panels."
- Given the economic climate, many governments want clearer deliverables, leading to a lack of interest in proteomics' potential: "It's a really bad time to be trying to do something that's an exploratory, data generation project with no clear deliverable in terms of benefits to the people providing the money."
- Some individuals also commented that they thought policy makers and funders might see proteomics as a kind of 'lesser' genomics, as both require large projects, but proteomics is less established, so therefore more of a gamble.

Technical hurdle or excuse for lack of bench to bedside KT?

- Some argue that true proteomics is too big for one lab to really handle, so it needs more collaboration. However, this kind of collaboration is still rare: "Aren't really many very good examples of true proteomics projects"
- But is this an intractable problem that will only be solved through mega projects?
- Some argue, no, that they can find pieces that can lead to clinical application, but they have to frame their piece of proteomics research carefully.

Is proteomics research creating "data cemeteries"?

- Some commented that proteomics research is often not organized with enough participation of clinicians (partially a funding issue), which hampers its ability to create clinical applications: "One day when the field will have the clinicians at the forefront, in my view, that's when the real clinical discoveries are going to be made"

Standards necessary or distractions at this stage?

- Some argue that standards are necessary for collaboration between scientists and publication (e.g. data reporting standards) and also for application (e.g. laboratory sampling & handling standards). However, others argue that the technology is still developing, as are the skills of researchers – so they are merely a distraction. "You want to be sure you can at least characterize the proteins, right? So we sent these [samples] around the world to groups that were getting in millions of dollars in grant per year. And most of them couldn't do this. I mean, come on! An F1 driver has to be able to drive the car around the circuit and not crash into the first pole, right?"

What do you think funders/regulators/clinicians should know about your work? Do they?